Abstract

The Rota-Baxter operators have been extensively studied over the past two decades. They are closely related to the classical Yang-Baxter equation and bialgebra structures. Rota-Baxter operators were defined over various algebraic structures over the past few years, and there are many fruitful results related to it. In this talk, we will give definitions and examples of Rota-Baxter operators on vertex algebras as a natural generalization of the Rota-Baxter operators on Lie algebras. We will also discuss the underlying dendriform structures given by Rota-Baxter vertex algebras, which have both the features of the usual associative dendriform and the commutative dendriform. This talk is based on a joint work with Chengming Bai, Li Guo, and Xiaoyan Wang.